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Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)	Complete if Known	
	Application Number	09/477,962
	Filing Date	January 5, 2000
	First Named Inventor	Ben Shen
	Group Art Unit	1652
	Examiner Name	Peter Tung
Attorney Docket Number	407T-8958200US	

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appear
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FOREIGN PATENT DOCUMENTS								
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OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS				
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.		T
KK	AA	BAO ET AL. (1998) "Resconstitution of the Iterative Type II Polyketide Synthase for Tetracenomycin F2 Biosynthesis." Biochemistry 37: 8132-8138		
KK	AB	BORCHERT ET AL. (1994) "Induction of Surfactin Production of <i>Bacillus subtilis</i> by <i>gsp</i> , a Gene Located Upstream of the Gramicidin S. Operon in <i>Bacillus brevis</i> ." J. Bacteriol. 176:2458-2462		
KK	AC	CALCUTT AND SCHMIDT (1994) "Gene organization in the bleomycin-resistance region of the producer organism <i>Streptomyces verticillus</i> ." Gene, 151: 17-21		
KK	AD	CANE ET AL. (1998) "Harnessing the Biosynthetic Code: Combinations, Permutations, and Mutations." Science 282: 63-68		
KK	AE	CARRERAS AND KHOSLA (1998) "Purification and in Vitro Reconstitution of the Essential Protein Components of an Aromatic Polyketide Synthase." Biochemistry 37: 2084-2088		
KK	AF	CARRERAS ET AL. (1997) "Utilization of Enzymatically Phosphopantetheinylated Acyl Carrier Proteins and Actyl – Acyl Carrier Proteins by the Actinorhodin Polyketide Synthase." Biochemistry 36: 11757-11761		
KK	AG	CODERRE ET AL. (1989) "The <i>entD</i> Gene of the <i>Escherichia coli</i> K12 Enterobactin Gene Cluster." J. Gen. Microbiology. 135:3043-3055		
KK	AH	CONTI ET AL. (1997) "Structural basis for the activation of phenylalanine in the non-ribosomal biosynthesis of gramicidin S." EMBO J. 16: 4174-4183		
KK	AI	COSMINA ET AL. (1993) "Sequence and analysis of the genetic locus responsible for surfactin synthesis in <i>Bacillus subtilis</i> ." Mol. Microbiology. 8:821-831		
KK	AJ	COX ET AL. (1997) "Post-translation modification of heterologously expressed <i>Streptomyces</i> type II polyketide synthase acyl carrier proteins." FEBS Lett. 405: 267-272		

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INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

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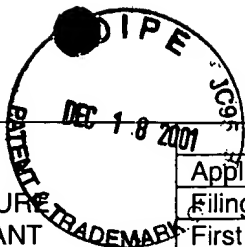
	AK	DEBABOV ET AL. (1996) "The D-Alanyl Carrier Protein in <i>Lactobacillus casei</i> . Cloning, Sequencing, and Expression of <i>dlc</i> ." 178: 3869-3876 <i>Journal Name?</i>	
KK	AL	DU AND SHEN (1999) "Identification and characterization of a type II peptide carrier protein from the bleomycin producer <i>Streptomyces verticillus</i> ATCC 15003." Chem. Biol. 6: 507-517	
KK	AM	EPPLE ET AL. (1998) "Characterization of a Novel Acyl Carrier Protein, RkpF, Encoded by an Operon Involved in Capsular Polysaccharide Biosynthesis in <i>Sinorhizobium meliloti</i> ." J. Bacteriol. 180: 4950-4954	
KK	AN	FITZMAURICE AND KOLATTUKUDY (1997) "Open Reading Frame 3, Which Is Adjacent to the Mycocerosic Acid Synthase Gene, Is Expressed as an Acyl Coenzyme A Synthase in <i>Mycobacterium bovis</i> BCG." J. Bacteriol. 179: 2608-2615	
KK	AO	FITZMAURICE AND KOLATTUKUDY (1998) "An Acyl-CoA Synthase (acoas) Gnen Adjacent to the Mycocersic Acid Synthase (<i>mas</i>) Locus Is Necessary for Mycocerosyl Lipid Synthesis in <i>Mycobacterium tuberculosis</i> var. <i>bovis</i> BCG." J. Biol. Chem. 273: 8033-8039	
	AP	GAIDENKO ET AL. Biotechnologia (1992) 13-19	
KK	AQ	GEHRING ET AL. (1996) "Ability of <i>Streptomyces</i> spp. Acyl carrier proteins and coenzyme A analogs to serve as substrates <i>in vitro</i> for <i>E. coli</i> holo-ACP synthase." Chem. Biol. 4: 17-24	
KK	AR	GEHRING ET AL. (1998) "The Nonribosomal Peptide Synthetase HMWP2 Forms a Thiazoline Ring During Biogenesis of Yeriniabactin, an Iron-Chelating Virulence Factor of <i>Yersinia pestis</i> ." Biochemistry 37: 11637-11650	
KK	AS	GEHRING ET AL. (1998) "Reconstitution and Characterization of the <i>escherichia coli</i> Enterobactin Synthetase from EntB, EntE, and EntF." Biochemistry 37: 2648-2659	
KK	AT	GEHRING ET AL. (1998) "Iron acquisition in Plague: modular logic in enzymatic biogenesis of yeriniabactin by <i>Yersinia pestis</i> ." Chem. Biol. 5: 573-586	
KK	AU	GOKHALE ET AL. (1999) "Dissecting and Exploiting Intermodular Communication in Polyketide Synthases." Science 284: 482-485	
KK	AV	GUENZI ET AL. (1998) "Coordinate Transcription and Physical Linkage of Domains in Surfactin Synthetase Are Not Essential for Proper Assembly and Activity of the Multienzyme Complex." J. Biol. Chem. 273: 14403-14410	
KK	AW	GUENZI ET AL. (1998) "Characterization of the Syringomycin Synthetase Gene Cluster." J. Biol. Chem. 273: 32857-32863	
KK	AX	HAESE ET AL. (1994) "Bacterial Expression of Catalytically Active Fragments of the Multifunctional Enzyme Enniatn Synthetase." J. Mol. Biol. 243: 116-122	
KK	AY	HAYDOCK ET AL. (1995) "Divergent sequence motifs correlated with the substrate specificity of (methyl)malony-CoA:acyl carrier protein transacylase domains in modular polyketide synthases." FEBS Lett. 374: 246-248	
KK	AZ	HOPWOOD (1997) "Genetic Contributions to Understanding Polyketide Synthases." Chem Rev. 97: 2465-2497	

Examiner Signature	<i>Kathleen</i>	Date Considered	3/6/02
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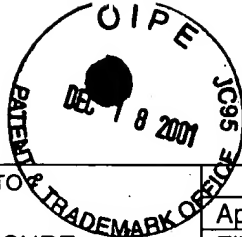
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	Examiner Name	Peter Tung
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KK	BA	HUANG ET AL. (1993) "Nucleotide Sequence and Characteristics of the Gene, <i>lpa-14</i> , Responsible for Biosynthesis for the Lipopeptide Antibiotics Iturn A and Surfactin from <i>Bacillus subtilis</i> RB14." J. Ferment. Bioeng. 76:445-450	
KK	BB	KENNEDY ET AL. (1999) "Modulation of Polyketide Synthase Activity During Lovastatin Biosynthesis." Science 284: 1368-1372	
KK	BC	KLEINKAUF AND VON DÖHREN (1996) "A nonribosomal system of peptide biosynthesis." Eur. J. Biochem. 236: 335-351	
KK	BD	KONIG ET AL. (1997) "The pipecolate-incorporating enzyme for the biosynthesis of the immunosuppressant rapamycin." Eur. J. Biochem. 247: 526-534	
KK	BE	KONZ ET AL. (1997) "The bacitracin biosynthesis operon of <i>Bacillus licheniformis</i> ATCC 10716: molecular characterization of three multi-modular prptide synthetases." Chem. Biol. 4: 927-937	
KK	BF	KU ET AL. (1997) "Expression of a functional non-ribosomal peptide synthetase module in <i>Escherichia coli</i> by coexpressiom with a phosphopantetheinyl transferases." Chem. Biol. 4: 203-207	
KK	BG	LAMBALOT AND WALSH (1995) "Colning, Overproduction, and Characterization of the <i>Escherichia coli</i> Holo-acyl Carrier Protein Synthase." J. Biol. Chem. 270: 24658-24661	
KK	BH	LAMBALOT ET AL. (1996) "A New enzyme superfamily-the phosphopantetheinyl transferases." Chem. Biol. 3: 923-936	
KK	BI	LEE AND LIPMANN (1970) "Tyrocidine Synthetase System." Method Emzymol. 43: 585-602	
KK	BJ	LI ET AL. (1990) "Nucleotide sequence and transcriptional analysis of the nosiheptide-resistance gene from <i>Streptomyces actuosus</i> ." Gene 91:9-17	
KK	BK	LI ET AL. (1996) "From Peptide Precursors to Oxazole and Thiazole-Containing Prptide antibioics: Microcin B17 Synthase." Science 274: 1188-1193	
KK	BL	MARAHIEL ET AL. (1997) "Modular Peptide Synthesis Involved in Nonribosomal Peptide Synthesis." Chem. Rev. 97: 2651-2673	
KK	BM	MILNE, ET AL. (1999) "Cofactor Requirements and Reconstitution Of Microcin B17 Synthetase: A Multienzyme Complex that Catalyzes the Formation of Oxazoles and Thiazoles in the Antibiotic Microcin B17." Biochemistry 38: 4768-4781	
KK	BN	MOOTZ AND MARAHIEL (1997) "The Tyrocidine Biosynthesis Operon of <i>Bacillus brevis</i> : Complete Nucleotide Sequence and Biochemical Characterization of Functional Internal Adenylation Domains." J. Bacteriol. 179: 6843-6850	
KK	BO	MORI ET AL. (1997) "Purification and Cloning of a Proline 3-Hydroxylase, a Novel Enzyme Which Hydroxylates Free L-Proline to <i>cis</i> -3-Hydroxy- L-Proline." J. Bacteriol. 179:5677-5683	
KK	BP	NAKANO ET AL. (1992) "Isolation and Characterization of <i>sfp</i> : a gene that functions in the production of the lipoptide biosurfactant, surfactin, in <i>Bacillus subtilis</i> ." Mol. Gen. Genet., 232: 313-321	
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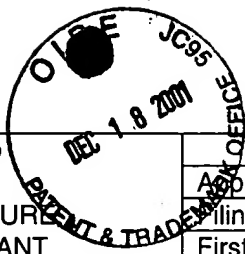
KK	BQ	NATRAJAN AND HECHT (1994) "Chapter 5: Bleomycins: Mechanism of Polynucleotide Recognition and Oxidative Degradation." pages 197-242 In: Molecular Aspects of Anticancer Drug-DNA Interaction Vol. 2, Neidle and Waring Eds., Macmillan, London	
KK	BR	OJIMA ET AL. (1999) "A common pharmacophore for cytotoxic natural products that stabilize microtubules." Proc. Natl. Acad. Sci. USA 96: 4256-4261	
KK	BS	PAITAN ET AL. (1999) "The First Gene in the Biosynthesis of the Polyketide Antibiotic TA of <i>Myxococcus xanthus</i> Codes for a Unique PKS Module Coupled to a Peptide Synthetase." J. Mol. Biol. 286: 465-474	
KK	BT	PELLUDAT ET AL. (1998) "The Yersiniabactin Biosynthetic Gene Cluster of The Yersiniabactin Biosynthetic Gene Cluster of <i>Yersinia enterocolitica</i> : Organization and Siderophore-Dependent Regulation." J. Bacteriol. 180: 538-546	
KK	BU	PEREGO ET AL. (1995) "Incorporation of D-Alanine into Lipoteichoic Acid and Wall Teichoic Acid in <i>Bacillus subtilis</i> ." J. Biol. Chem. 270: 15598-15606	
KK	BV	PFEIFER ET AL. (1995) "Characterization of Tyrocidine Synthetase 1 (TY1): Requirement of Posttranslation Modification for Peptide Biosynthesis." Biochemistry 34: 7450-7459	
KK	BW	QUADRI ET AL. (1998) "Identification of a <i>Mycobacterium tuberculosis</i> gene cluster encoding the biosynthetic enzymes for assembly of the virulence-conferring siderophore mycobactin." Chem. Biol. 5:631-645	
KK	BX	QUADRI ET AL. (1998) "Characterization of Sfp, a <i>Bacillus subtilis</i> Phosphopantetheinyl Transferase for Peptidyl Carrier Protein Domains in Peptide Synthetases." Biochemistry 37: 1585-1595	
KK	BY	SHEN AND HUTCHINSON (1993) "Enzymatic Synthesis of a Bacterial Polyketide from Acetyl and Malonyl Coenzyme A." Science 262: 1535-1540	
KK	BZ	SHEN ET AL. (1992) "Purification and Characterization of the Acyl Carrier Protein of the <i>Streptomyces glaucusens</i> Tetracenomycin C Polyketide Synthase." J. Bacteriol. 174:3818-3821	
KK	CA	SHEN ET AL. (1999) "Bleomycin Biosynthesis in <i>Streptomyces verticillus</i> ATCC15003: A Model of Hybrid Peptide and Polyketide Biosynthesis." Bioorganic Chem. 27: 155-171	
KK	CB	SPAINK ET AL. (1991) "A novel highly unsaturated fatty acid moiety of lipo-oligosaccharide signals determines host specificity of <i>Rhizobium</i> ." Nature 354: 125-130	
KK	CC	STACHELHAUS AND MARAHIEL (1995) "Modular structure of genes encoding multifunctional peptide synthetases required for non-ribosomal peptide synthesis." FEMS Microbiol. Lett. 125: 3-14	
KK	CD	STACHELHAUS ET AL. (1996) "Biochemical Characterization of peptidyl carrier protein (PCP), the thiolation domain of multifunctional peptide synthetases." Chem. Biol. 3: 913-921	
KK	CE	STACHELHAUS ET AL. (1998) "Peptide Bond Formation in Nonribosomal Peptide Biosynthesis." J. Biol. Chem., 273: 22773-22781	

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KK	CF	STACHELHAUS ET AL. (1999) "The specificity-conferring sode of adenylation domains in nonribosomal peptide synthetases." Chem. Biol. 6: 493-505	
KK	CG	STACHLHAUS AND MARAHIEL (1995) "Modular Structure of Peptide Synthetases Revealed by Dissection of the Multifunctional Enzyme GrsA." J. Biol. Chem. 270: 6163-6169	
KK	CH	STEIN ET AL. (1996) "The Multiple Carrier Model of Nonribosomal Peptide Biosynthesis at Modular Multienzymatic Templates." J. Biol. Chem. 271: 15428-15435	
KK	CI	SUGIYAMA ET AL. (1994) "Characterisation by molecular cloning of two genes from Streptomyces verticillus encoding resistance to bleomycin." Gene 151: 11-16	
KK	CJ	TAKITA AND MUROKA (1990) "Biosynthesis and Chemical Synthesis of Bleomycin." Chapter 11, pages 289-309 in Biochemistry of Peptide Antibiotics: Recent Advances in the Biotechnology of b-Lactams and Microbial Peptides, Kleinkauf, H. & von Döhren, H. eds., W. de Gruyter, N.Y.	
KK	CK	Von Döhren et al. (1997) "Multifunctional Peptide Synthetases." Chem. Rev. 97: 2675-2705	
KK	CL	WALSH ET AL. (1997) "Post-translation modification of polyketide and nonribosomal peptide synthesis." Curr. Opin. Chem. Biol. 1: 309-315	
KK	CM	WEINREB ET AL. (1998) "Stoichiometry and Specificity of In Vitro Phosphopantetheinylation and Aminoacylation of the Valine-Activating Module of Surfactin Synthetase." Biochemistry 37: 1575-1584 1584 1584	
KK	CN	WRIGHT ET AL. (1992) "Codon usage in the G+C-rich Streptomyces genome." Gene 113:55-65	

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